

REMARKS

The non-final Office Action mailed March 18, 2004 has been reviewed and carefully considered. Claims 1-49 are pending in the application. Claims 1-49 were rejected. It is believed that in view of the remarks provided herein below and the attached Combined Declaration and Terminal Disclaimer under 37 C.F.R. §§ 1.130 and 1.321(c) place pending claims 1-49 in condition for allowance. Reconsideration of the claims in view of the remarks provided herein below and withdrawal of the present rejections are respectfully requested.

In paragraph 2 on page 2 of the Office Action, claims 1-49 were provisionally rejected under the judicially created doctrine of double patenting over claims 1, 2, 10, 13-16, 22, 23, 32, 35-38, 44, 45, 53, 56-59, 65, 66 and 74-78 of copending Application No. 09/694,448.

Applicants respectfully traverse the provisional rejection under the judicially created doctrine of double patenting. However, Applicants have submitted a terminal disclaimer under 37 C.F.R. §§ 1.130 and 1.321(c) in order to overcome the rejection.

In paragraph 3 on page 3 of the Office Action, claims 1-49 were rejected under § 103(a) over Babkin (U.S. Patent No. 5,642,438) in view of Mattela et al. (U.S. Patent No. 5,781,239).

In paragraph 4 on page 4 of the Office Action, claims 1-49 were rejected under § 103(a) over Babkin in view of Dierke (U.S. Patent No. 5,854,757).

Applicants respectfully traverse the § 103(a) rejections. Applicants respectfully assert that the requirements for a § 103(a) rejection are not present and a *prima facie* rejection fails because the Office Action fails to cite a reference or references that teach, disclose or suggest all the claim limitations of Applicants' application.

Applicants' independent claims require at least "arranging discrete cosine transform equations into collections, wherein at least one collection includes at least two discrete transform equations, and wherein the at least two discrete transform equations includes at least two discrete cosine transform constants; scaling the discrete cosine transform equations in a collection by dividing each of the discrete cosine transform constants in the collection by one discrete cosine transform constant from the collection; and representing each of the scaled discrete cosine

transform constants with sums of powers-of-2, wherein the sums of powers-of-2 are calculated to approximate the scaled discrete cosine transform constants.”

The Office Action states that Babkin suggests scaling transform equations using a scaling term to maintain a substantially uniform ratio between the transform constants within the collection, i.e., scaling term α for the first collection, δ for the second collection and v for the third collection.

However, as explained beginning at col. 2, line 34 and continuing to col. 3, line 28, a one-dimensional forward DCT may be written as:

$$F(k) = C(k) / 2 \sum_{i=0}^7 f(i) \cos((2i+1)kp)$$

Babkin discloses that shorthand notations may be used for certain trigonometric functions, such as $\cos 4p = \cos(\pi/4) = 0.7071067$. These shorthand notations are used to form equation set (4). Thus, the scaling term α for the first collection, δ for the second collection and v for the third collection asserted by the Office Action are not scaling terms at all, but rather are merely shorthand representations. Moreover, the shorthand notations, α , δ and v , are not selected from a collection for scaling that collection.

Thus, because Babkin only uses shorthand notations and not scaling terms for a collection selected from that collection, Applicants respectfully submit that the independent claims are patentable over Babkin.

Nevertheless, still further, the Office Action asserts that scaled transform equations are shown at col. 20, lines 1-10. However, the so-called scaled transform equation shown at col. 20, lines 1-10 is, in reality, only a one-dimensional transform for producing non-normalized components. More particularly, at col. 10, lines 8-20, the transform equation defined by Eqs. set (4) and modified by Eqs. set (4') provides non-normalized coefficients. Claim 1 clearly states that $\tilde{F}(\cdot)$ are transformed non-normalized values. Therefore, Babkin does not disclose, teach or suggest “scaling the discrete cosine transform equations in a collection by dividing each of the discrete cosine transform constants in the collection by one discrete cosine transform constant from the collection,” from Applicants’ application.

Mattela and Dierke fail to remedy the deficiencies of Bablin. Mattela and Dierke were cited merely for teaching representation of constants as powers of two. As with Babkin, Mattela and Dierke also fail to suggest scaling the discrete cosine transform equations in a collection by dividing each of discrete cosine transform constants in the collection by one discrete cosine transform constant from the collection.

However, Applicants also submit that Mattela and Dierke fail to suggest representing each of the scaled discrete cosine transform constants with sums of powers-of-2, wherein the sums of powers-of-2 are calculated to approximate the scaled discrete cosine transform constants. Mattela and Dierke show a collection of equations, but fail to show arranging equations into collections. Applicants maintain that Dierke merely discloses that each row is scaled with its own scaling factor. Applicants further submit that Mattela merely shows that P matrix constants that are represented as at most six ones in a respective bit representation. The P matrix constants are truncated until at most six ones in a respective bit representation. Thus, Mattela does not suggest sums of powers-of-2 are calculated to approximate the scaled discrete cosine transform constants.

Thus, Applicants respectfully submit that Babkin, Mattela and Dierke, alone or in combination, fail to suggest all of the elements recited in the independent claims. Accordingly, claims 1, 12, 25, 36 and 47 are patentable over Babkin, Mattela and Dierke.

Dependent claims 2-11, 13-24, 26-35, 37-46 and 48-49 are also patentable over the references, because they incorporate all of the limitations of the corresponding independent claims 1, 12, 25, 36 and 47. Further, dependent claims 2-11, 13-24, 26-35, 37-46 and 48-49 recite additional novel elements and limitations. Applicants reserve the right to argue independently the patentability of these additional novel aspects. Therefore, Applicants respectfully submit that dependent claims 2-11, 13-24, 26-35, 37-46 and 48-49 are patentable over the cited references.

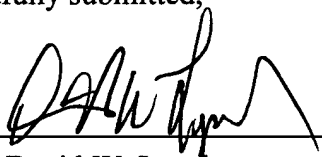
Furthermore, having overcome the rejection of claims 1-49 based on obviousness-type double patenting grounds, and in view of non-assertion of other grounds of rejection, Applicants believe claims 1-49 are in condition for allowance. Accordingly, reconsideration of this application and its allowance are requested.

On the basis of the above amendments and remarks, it is respectfully submitted that the claims are in immediate condition for allowance. Accordingly, reconsideration of this application and its allowance are requested.

If a telephone conference would be helpful in resolving any issues concerning this communication, please contact Attorney for Applicants, David W. Lynch, at 651-686-6633 Ext. 116.

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